V1742 VME Readout

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V1742 Specs

- Data readout can occur while the board is sampling
- Digitize trigger
  - 181us dead time, 5.52khz max trigger rate
  - 55,344 bytes per trigger, ~300MB/sec
- Don’t digitize trigger
  - 110us dead time, 9.09khz max trigger rate
  - 49,200 bytes per trigger, ~450MB/sec

VMIVME 7750 Specs

- Only 100Mb/sec ethernet
- Tundra Universe II chip can do MBLT transfers, 50MB-60MB/sec
- Would have to modify the readout utility to use chained DMA to do MBLT transfers
  - Currently using single reads, which is probably about 1/3 as fast as MLBT transfers.
- Max ~1khz trigger rate reading out VME, ~200hz over ethernet

Other Possible Problems

- NFS and pet01 might not be able to keep up with 50-60MB/sec of data
- Networking is probably only 100Mb/sec

Options if we need to go faster

- Try to find a VMIVME7805
  - Same VME chip, but 1Gb/sec ethernet
- Buy a new VME board
  - Faster chip (320MB/s) and 1Gb/sec ethernet
- Use the optical readout (80MB/sec)
- Buy a GigE switch